

Amendments to the Drawings:

No amendments are made to the drawings herein.

REMARKS

By the foregoing Amendment additional Claims 6-10 are presented, and the Abstract is amended. Entry of the Amendment, and favorable consideration thereof is earnestly requested.

Claims 1-5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Binkley (U.S. Patent No. 4,838,118) in view of Nestler et al. (U.S. Patent No. 6,659,250). Applicant respectfully asks the Examiner to reconsider this rejection in view of the below Remarks.

The present invention is directed to a device for transmitting torque between two rotatable, coaxial shaft members. The device includes a number of alternate clutch discs, connected to the two shaft members and engageable to counteract differential rotational speed between the shaft members. The device also includes braking means for braking rotational movement, the rotational velocity in the braking means being proportional to the differential rotational speed. The device also includes means for transmitting the differential rotational speed to the braking means. What particularly separates the present invention from the prior art of which Applicant is aware, however, is the fact that the means for transmitting the differential rotational speed to the braking means comprises a number of balls arranged between on one hand a rotatable, first thrust ring and a second thrust ring attached to one of the shaft members and on the other hand an outer ring fixed to a housing of the device and a gear ring engaging a rotatable brake shaft of the braking means.

Applicant respectfully submits that at least the above-highlighted elements are not disclosed, taught or suggested in any way by Binkley or Nestler et al., either alone or in combination.

Binkley discloses a differential gear mechanism which includes a clutch pack disposed between one of two side gears and the gear case, which clutch pack is operable, when engaged, to retard relative rotation between the gear case and the side gear. Disposed adjacent the clutch pack is a cam means (23,43,45,47) which is operable to ramp-up and engage the clutch pack. An engagement shaft (53) is in splined engagement (49,55) with the cam member and has an opposite end extending through the gear case and in splined engagement (59,63) with a retarding gear member (61). An actuator (69) includes an actuation member (71) which moves from a first position (FIG. 1) to an actuated position in response to an external signal (73) to bias the retarding gear into engagement with the gear case, thus retarding rotation of the engagement shaft relative to the gear case, and retarding rotation of the cam means relative to the gear case, to cause engagement of the clutch pack.

The Examiner explicitly recognizes that "Binkley, however, discloses an actuator mechanism without balls." However, while this statement is true, Applicant respectfully submits that the statement is not pertinent to the claims of the present application. It should be noted that the Claims do not require an actuator mechanism with balls but rather a means for transmitting the differential rotational speed to the braking means having a number of balls arranged in a very particular manner. The actuator means of the present invention (referred to in the present application as "braking means" 26, 27, 28) is not the part that is required to include the balls. Rather, it is the means for transmitting the differential

rotational speed to the braking means (i.e., the actuator means) which is required to comprise the balls.

Thus, with respect to Binkley, actuation takes place by virtue of an axially moving actuation member (71) which forms part of actuator (69). Thus, these elements 69, 71 are the “actuator means” or “braking means” of Binkley. The means for transmitting the differential rotational speed to the braking means is disclosed in Binkley as comprising engagement shaft (53) in splined engagement (49,55) with the cam member and in splined engagement (59,63) with a retarding gear member (61). Clearly, this means for transmitting the differential rotational speed to the braking means also does not include any balls.

With respect to Nestler et al., this reference, as is recognized by the Examiner, discloses a “conventional ball ramp actuator”. More specifically, Nestler et al. discloses a pair of setting rings centered on a common axis, one of which is axially held, with the other one being axially displaceably mounted, and one of which is rotationally fixedly held in a housing so as to be prevented from rotating, with the other one being rotatably drivable. On their respective end faces facing one another, the two setting rings each include an identical multitude of circumferentially extending grooved ramps, with a ball being disposed in each pair of ramps. Thus, when the driven setting ring is rotatably displaced, this rotational motion is translated via the ramped grooves and the balls into axial displacement of the other setting ring.

Thus, Nestler et al. discloses an actuator means which includes a plurality of balls. The reference does not disclose, teach or suggest in any way a means for transmitting the differential rotational speed to the braking means having a number

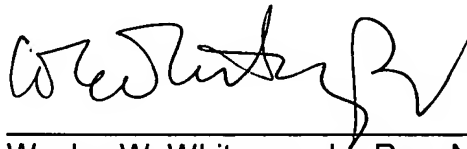
of balls. Moreover, Nestler et al. discloses that the balls are disposed within ramped grooves in the two facing surfaces of setting rings. Nestler et al. does not disclose, teach or suggest in any way that the balls be arranged between on one hand a rotatable, first thrust ring and a second thrust ring attached to one of the shaft members and on the other hand an outer ring fixed to a housing of the device and a gear ring engaging a rotatable brake shaft of the braking means as is required by all rejected claims.

Thus, since neither cited reference discloses (i) a means for transmitting the differential rotational speed to the braking means having a number of balls, and/or (ii) that the balls be arranged in a very specific way between rotatable first and second thrust rings, an outer ring fixed to a housing of the device, and a gear ring engaging a rotatable brake shaft of a braking means, as is required by all rejected claims, Applicant respectfully submits that a combination of the two cited references would not render obvious the rejected claims.

Rather, Applicant respectfully submits that if the two cited references were combined, the resulting device would be one where actuator (69) of Binkley, with its axially moving actuation member (71), is replaced by the "conventional ball ramp actuator" as disclosed by Nestler et al. However, the means for transmitting the differential rotational speed to the braking means would remain as disclosed in Binkley, that is one comprising engagement shaft (53) in splined engagement (49,55) with the cam member and in splined engagement (59,63) with a retarding gear member (61). Thus, the means for transmitting the differential rotational speed to the braking means would still have no balls, and would certainly not have any balls arranged in the precise manner claimed. As such, this device clearly would not anticipate or render obvious the present invention as claimed.

For the foregoing reasons, Applicant respectfully submits that all pending claims, namely Claims 1-10, are patentable over the references of record, and earnestly solicits allowance of the same.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Wesley W. Whitmyer, Jr.', with a large, stylized 'R' at the end.

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